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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/752,803

01/07/2004

Wenzhang Wang

4980-108 US

5132

7590

06/14/2006

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EXAMINER

HO, TAN

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/752,803

Applicant(s)

WANG, WENZHANG

Examiner

Tan Ho

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30-33 is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 12, 15, 16, 18-28 and 34-37 is/are rejected.
- 7) ☒ Claim(s) 10, 13, 14, 17 and 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.



TAN HO  
PRIMARY EXAMINER

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1 and 18 is objected to because of the following informalities: In claim 1, line 5, and claim 30, line 9, "said ridge portion" should be changed to -- said ridged portion--; In claim 18, line 2, "a vehicle" should be change to --the vehicle-- if it is the vehicle defined in claim 1, line 1. In claim 30, line 9, the recitation "said microstrip said termination portion" should be changed to -- said microstrip, and said termination portion--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 7, 8, 18, 19, 21, 34, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Ajioka (US Patent 3,503,073).

Ajioka discloses, in figures 1 and 2, an antenna array comprising a plurality of waveguides (12,14,16,18) positioned parallel to one another, wherein each of the waveguide includes a ridged portion 18 extending from a bottom surface 22, the ridged portion positioned longitudinally between a pair of walls (22,26) coupled to the bottom surface, a radiating surface 20, and a plurality X-shaped cross slot radiating elements distributed along the radiating surface. The antenna array which is mounted on a vehicle is considered an intended use.

Art Unit: 2821

4. Claims 1, 2, 5, 6-9, 18, 19, 20, 23-27, 34, and 36 are rejected under 35

U.S.C. 102(b) as being anticipated by Kastner et al (US Patent 5,638,079)

Kastner et al disclose, in figures 1 and 6, an antenna array comprising a plurality of waveguides (20A,20B) positioned parallel to one another, wherein each of the waveguide includes a ridged portion 8 extending from a bottom surface (not shown in number), the ridged portion positioned longitudinally between a pair of walls (not shown in number) coupled to the bottom surface, a radiating surface 4, and a plurality radiating elements (6A,6B) distributed along the radiating surface. Regarding claim 2, Kastner et al teach the waveguides providing a circular polarization, see column 2, lines 50-52.

Regarding claim 5, Kastner et al teach the slot radiating elements spaced half a wavelength apart, see column 3, line 27 and 28. The antenna which is mounted on a vehicle is considered an intended use.

5. Claims 1-4, 6-8, 18, 19-22, 24, 25, 26, 34, and 36 are rejected under 35

U.S.C. 102(b) as being anticipated by Uematsu et al (US Patent 5,579,019)

Uematsu et al disclose, in figure 1, an antenna array comprising a plurality of waveguides (1A-1L) positioned parallel to one another, wherein each of the waveguide includes a ridged portion extending from a bottom surface (not shown in number), the ridged portion positioned longitudinally between a pair of walls (not shown in number) coupled to the bottom surface, a radiating surface, and a plurality radiating elements (4) distributed along the radiating surface. Regarding claim 2, Uematsu et al teach the waveguides providing a circular polarization, see column 6, line 66 through column 7, line 1. The antenna which is mounted on a vehicle is considered an intended use.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 11, 12, 15, 16, 28, 35, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kastner et al in view of Mulliner et al (US Patent 4,499,157).

The patent to Kastner et al, described above, differs from the claimed invention because it does not disclose the waveguide comprising a bend to rotate a feed end of the waveguide downward and the waveguide which is formed of a metalized plastic material and by dip brazing process. Mulliner et al disclose, in figure 1 and 2, a waveguide having a bend (15,13) of about 90 degrees, and a cavity 21 terminating the bend. The patent to Kastner et al also teaches that the waveguide is formed of plated plastic and dip brazing process, see column 4, lines 22-63. Since one of ordinary skill in the art would have recognized the benefits of reducing the weight and cost of the waveguide, it would have been obvious to make the waveguide of Kastner et al with the method as taught by Mulliner et al, see column 1, lines 60-65.

***Allowable Subject Matter***

8. Claims 10, 13, 14, 17, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 30-33 are allowed.

Claims 30 recites a microstrip structure comprising a microstrip terminated on one end by a termination portion, wherein the termination portion having a larger dimension portion than the microstrip, and said termination portion contacting a ridged portion below a bend of the waveguide.

The patents to Ajioka, Kastner et al, and Uematsu et al do not teach these limitations.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Ho whose telephone number is (571) 272-1822. The examiner can normally be reached on M-F (8:00AM - 5:00PM).

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
TAN HO  
PRIMARY EXAMINER